

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : 7

REMARKS

Reconsideration of the application as amended is requested.

In the Office Action dated April 28, 2009, claims 1-2 and 4-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Zenor U.S. Patent No. 5,447,006 in view of Georgeau et al U.S. Patent No. 6,579,924; claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Zenor '006 in view of Georgeau '924 and further in view of Venable U.S. Patent No. 4,996,812; claims 8-14, 17-22 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Venable '812 in view of Georgeau '924 and further in view of Van Wagoner U.S. Patent No. 4,719,723; claims 15-16, and 23-25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Venable '812 in view of Georgeau '924 and Van Wagoner '723 in further in view of Beck U.S. Patent No. 4,498,267; and claim 27 was rejected under 35 U.S.C. 103(a) as being unpatentable over Venable '812 in view of Georgeau '924 and Van Wagoner '723.

As an initial matter, Applicant notes that the Georgeau '924 patent was filed on December 12, 2000, was published on August 22, 2002, and issued on June 17, 2003, and lists Philip C. Georgeau and Lisa A. Mulder as inventors. The present application is a divisional of U.S. Application No. 10/061,545, filed on February 1, 2002. The inventorship in the present application is identical to the inventors of the Georgeau '924 patent, and the present application was assigned to Chem Link Inc. pursuant to an Assignment of the parent application 10/061,545, recorded at Reel 012570 and Frame 0802. Accordingly, the Georgeau '924 patent is not prior art under 35 U.S.C. §102(a) or 35 U.S.C. §102(b). Because the inventorship of the present application and the Georgeau '924 patent are identical, the Georgeau '924 patent is also not believed to be prior art under 35 U.S.C. §102(e). Still further, pursuant to 35 U.S.C. §103(c)(1), the Georgeau '924 patent and the present application were owned by the same entity (Chem Link, Inc.), such that the Georgeau '924 patent cannot be properly considered for this reason as well.

Nevertheless, a pitch pocket and sealant product was sold as least as early as January 1,

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 8

2001, and this prior sale is believed to be prior art pursuant to 35 U.S.C. §102(b).

Accordingly, Applicant requests that the Examiner consider the Georgeau '924 patent to be "admitted prior art", and the above comments concerning the Georgeau '924 patent have been made solely to clarify the record and to ensure compliance with 37 C.F.R. §1.56.

As an initial matter, Applicant notes that "[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007) Also, "It is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Wesslau*, 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965); see also *In re Mercier*, 515 F.2d 1161, 1165-66, 185 USPQ 774,778 (CCPA 1975). *See also Abbott Laboratories v. Sandoz, Inc.* 544 F.3d 1341 (Fed. Cir. 2008) "In addressing the question of obviousness a judge must not pick and choose isolated elements from the prior art and combine them so as to yield the invention in question if such a combination would not have been obvious at the time of the invention.", citing *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 106 S.Ct. 1578, 89 L.Ed.2d 817 (1986).

Independent claim 1 has been amended to recite "a roof substrate having a sloped upper surface ... of a low slope roof of a building structure". Similarly, independent claim 5 has been amended to recite "a rigid low slope roof structure ... having a roof substrate defining a sloped upper surface" (emphasis added). Support for these amendments can be found, for example, paragraph [0013] and Figs. 1 and 2 of the present application as filed. Independent claims 1 and 5 have also been amended to recite that "the adhesive has sufficient viscosity to form beads on the sloped roof substrate upon extrusion of the adhesive onto the sloped upper surface of the roof substrate". Support for these amendments can be found at paragraph [0015] of the present application as filed, which states that

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : 9

This adhesive can be used at temperatures below 40°, and, because it is extruded directly to the rigid deck, it is not adversely affected by wind or the like during application. The rheology (consistency) of this adhesive is designed to produce, upon extrusion, a round bead that maintains its profile (shape) after application to a rigid surface. In a preferred embodiment, the adhesive 7 has a viscosity of about 200,000 to 300,000 centipoise. This viscosity level permits extrusion, yet provides high profile beads. Viscosities as low as about 100,000 centipoise or as high as about 500,000 centipoise may be utilized. Such high profile beads of adhesive improve contact and transfer of the adhesive to the flexible membrane surface and bridge gaps that may exist as a result of roughness or irregularity in the rigid surface.

Extrusion of the beads of adhesive is also shown in Fig. 1 of the present application.

In contrast to the arrangement of amended claims 1 and 5, Georgeau '924 discloses a "one-part, moisture curable, pourable sealer compositions" (column 2, lines 30-31). At column 4, lines 14-15, Georgeau '924 again states that the sealant is "pourable" ("the one-part moisture curable, pourable sealer compositions of this invention ... "). At column 5, lines 24-33, Georgeau '924 states that "The moisture curable compositions of this invention are particularly useful as sealants, especially as a sealer composition for forming a seal around a roof penetration. When used as a sealer for sealing a roof penetration, the composition is dispensed into to (sic, "to" should be "a") pitchpan formed around a roof member."

Zenor '006 teaches a method of patching a single ply roof, including the steps described at column 3, line 49 through column 4, line 15 of Zenor '006. The method includes saturating a paint brush with NMP activator chemical 24, and wiping a coating of NMP onto the surfaces that are seamed together (step 3), followed by hot-air welding the seamed surface 26 and matching membrane patch seamed surface 28 together. At column 4, lines 12-17, Zenor '006 states that "This completes a method where the welded seam can be made as strong as the membrane itself due to the activation of the chlorosulfonated polyethylene caused by the NMP solvent activator. It has been found that full strength laboratory grade NMP should be used

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : 10

(e.g., no dilution) for best results." At column 2, lines 45-54, Zenor '006 states that "use of NMP activator as described herein results in a welded seam that can be made as strong as the membrane itself. Test results show that NMP activator acts as a temporary plasticizer allowing the patch membrane and existing membrane to be fused together into a homogeneous bond. It is believed that NMP acts as part solvent and part plasticizer. Laboratory data shows that NMP facilitates reactive curing of chlorosulfonated polyethylene derived membrane regardless of age."

The Office Action of a April 28, 2009 states that "Zenor discloses ... a moisture curing substantially non-volatile adhesive". At column 2, lines 28-30, Zenor '006 discloses that the NMP chemical liquid activator is a "N-methyl-2-pyrrolidone". As discussed above, Zenor '006 also states that "It is believed that NMP acts as part solvent and part plasticizer." And that "Laboratory data shows NMP facilitates reactive curing of chlorosulfonated polyethylene derived membrane" (column 2, lines 49-53). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" MPEP 2112(IV), citing *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(quoting *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991))(emphasis added). Also, MPEP 2141 states that "when making an obviousness rejection, Office Personnel must ensure that the written records includes findings of fact concerning the state of the art and the teachings of the references applied herein" Applicant respectfully asserts that there is no evidence of record that the NMP of Zenor '006 is a "moisture curing substantially non-volatile adhesive". Similarly, there is no evidence of record that the adhesive 38 (column 3, line 23, Fig. 2) of Zenor '006 used at overlapping first and second sheets of flexible roof membranes 34 and 36, respectfully, is a "moisture curing substantially non-volatile adhesive".

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 11

Also, Applicant has carefully reviewed Zenor '006, and can find no evidence that either the NMP or adhesive 38 is used to adhere a membrane to a sloped upper surface of a roof substrate as recited in independent claims 1 and 5. Specifically, the adhesive 38 (Fig. 2) of Zenor '006 adheres membranes 34 and 36 together at the overlapping portions thereof. Similarly, the NMP activator 24 of Zenor '006 is only utilized to adhere the membrane patch 12 to the first and second membranes 34 and 36. Thus, Zenor '006 teaches adhering membrane layers 12, 34, and 36 together at overlapping portions. Zenor '006 does not describe adhesively bonding a membrane to the layer of insulation 32. Rather, Zenor specifically teaches use of mechanical fasteners for this: "The sheets which form the membrane are secured to the insulation and the underlying roof deck at spaced locations by fastener assemblies which are spaced along the margins of the sheets. Each fastener assembly comprises a washer-like disc made of plastic or metal and further comprises a screw adapted to thread into the roof deck to cause the disc to clamp the membrane downwardly against the insulation." (column 1, lines 18-25)(emphasis added).

Accordingly, Zenor '006 actually teaches use of mechanical fasteners to secure the roof membrane to the roof deck, and the adhesives of Zenor '006 are only used to adhere the membranes to one another along overlapping portions of the membranes. Applicant respectfully asserts that there would be no reason to replace the mechanical fasteners of Zenor '006 with a pourable sealant that is dispensed into a pitch pocket as disclosed in Georgeau '924. Applicant notes that "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." MPEP 2141.02, citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

Furthermore, as noted above, independent claims 1 and 5 have been amended to recite that "the adhesive has sufficient viscosity to form beads on the sloped roof substrate upon extrusion of the adhesive onto the sloped upper surface of the roof substrate". As discussed above, Georgeau '924 discloses a "one-part pourable sealant" (see, e.g., Abstract of Georgeau

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 12

'924) that can be poured into a pitchpan to form a seal around a penetration in a roof member. As discussed above, Zenor '006 actually teaches use of screws to attach a roof membrane to a roof deck, and in no way contemplates use of an adhesive to secure a membrane to a roof deck. Furthermore, Applicant respectfully asserts that it is not at all clear that the pourable sealer of Georgeau '924 would provide a workable substitute for mechanical fasteners, even if such a modification of Zenor '006 were to be attempted. Applicant notes that in order to render a later invention unpatentable for obviousness, the prior art must enable one skilled in the art to make and use the later invention, as opposed to the prior art itself being enabling. *In re Kumar*, 418 F.3d 1361, 76 USPQ2d 1048 (Fed. Cir. 2005). Furthermore, "Combining known prior art elements is not sufficient to render the claimed invention obvious if the results would not have been predictable to one of ordinary skill in the art." MPEP 2143, *citing In re Adams*, 383 U.S. 39, 51-52, 148 USPQ 479, 483-84 (1966). Although it is unclear what the results of the proposed modification of Zenor '006 and Georgeau '924 would be, Applicant does not have to prove that a proposed modification is impossible or unworkable in order to establish patentability.

Claims 1-4 depend from claim 1, and claims 6-7 depend from claim 5, such that these claims are believed to be allowable for those reasons set forth above in connection with independent claims 1 and 5.

With respect to independent claim 8, Applicant notes that Venable '812 discloses a membrane 18 that "includes an upper flexible EPDM rubber layer 20 together with a non-woven polyester fleece-like layer 22 (column 3, lines 20-22). Venable '812 states that "the preferred adhesive 15 is a polyurethane foam system (column 4, lines 15-16). At column 1, lines 51-60, Venable '812 states that "The membrane includes a sheet of flexible material (e.g. EPDM rubber) having a fleece-like matting secured to the underside thereof. It has been found that the use of such matting permits the membrane to be strongly adhered to the adhesive, with the matting being at least partially embedded within the adhesive itself. At the same time, use of the matting makes it possible to fabricate the roof structure with a vapor venting spacing

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 13

between the adhesive material and the flexible membrane sheet." (emphasis added). Thus, Venable '812 itself clearly teaches polyurethane foam adhesive in combination with a membrane having a fleece backing.

As noted above "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art." KSR at 1741. Applicant also reiterates that "It is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Wesslau*, *supra*.

As discussed above, Georgeau '924 discloses a pourable sealant. Applicant respectfully asserts that it is unclear what would happen if a pourable sealant were poured onto the sloped roof structure of Van Wagoner '723. Although low slope roof structures may have a very small slope, such roofs do have some slope to provide for drainage of water. Applicant respectfully asserts that there is no evidence of record establishing that one skilled in the art could simply pour the sealant of Georgeau '924 onto a sloped roof and adhere a membrane to the sloped roof surface.

Still further, the prior art itself does not provide any reason to modify Venable '812 by substituting the EPDM membrane of Van Wagner '723. Venable '812 specifically teaches that "it is very difficult to properly bond EPDM rubber directly with an adhesive" (column 1, lines 39-40). Applicant respectfully asserts that it is unreasonable to assert that one skilled in the art would first modify Venable '812 in a manner that is directly contrary to Venable '812 (i.e., substitution of an EPDM membrane for the fleece-backed membrane 18 of Venable '812), followed by further modification of Venable '812 (substituting the pourable sealant of Georgeau '924 for the polyurethane foam of Venable '812), wherein the unworkability (no venting for urethane foam) of the first modification is apparently the motivation for the second modification.

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 14

Claims 9-15 depend from claim 28, and are therefore believed to be allowable for those reasons set forth above in connection with independent claim 8.

Independent claim 17 recites, among other features, a "fluted steel deck" below "foam insulation", and "moisture curing adhesive bonding the foam insulation to the steel deck without the use of mechanical fasteners". (emphasis added). The Office Action dated April 28, 2009 states that "Venable discloses a roof deck structure but lacks that comprising:

- a rigid low slope roof structure as shown by VW however, Venable discloses, foam insulation 14 forming a roof substrate;
- a waterproof flexible membrane 18 covering said roof substrate;
- a moisture curing substantially non-volatile adhesive 15 disposed between the roof substrate 10 and the flexible membrane 10 to thereby bond the flexible membrane 10 to the roof substrate; a fluted steel deck 12 below the foam insulation 14; and
- moisture curing adhesive bonding the foam insulation to the steel deck without the use of mechanical fasteners.

This portion of the Office Action is quite unclear, and Applicant is unsure what feature of Venable (or VW) is purportedly "moisture curing adhesive bonding the foam insulation to the steel deck without the use of mechanical fasteners". Applicant can only assume that the Examiner is asserting that Venable '812 discloses moisture curing adhesive bonding foam insulation to a steel deck. However, the Office Action does not provide any guidance as to where Venable '812 purportedly discloses any such feature. Applicant has reviewed Venable '812 in detail, and can find no disclosure of moisture curing adhesive bonding the foam 14 to the metal decking 12 of Venable '812.

According to MPEP 2141 (II), "Office personnel must provide an explanation to support an obviousness rejection under 35 U.S.C. 103. 35 U.S.C. 132 requires that the applicant be notified of the reasons for the rejection of the claim so that he or she can decide how best to proceed. Clearly setting forth findings of fact and the rationale(s) to support a

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 15

rejection in an Office action leads to the prompt resolution of issues pertinent to patentability." Applicant reiterates that "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" MPEP 2112(IV), citing *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(quoting *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991))(emphasis added).

Applicant respectfully asserts that Venable '812 simply does not disclose "moisture curing adhesive bonding foam insulation to the steel deck" as asserted in the Office Action. The rejection of independent claim 17 is therefore improper, and should be withdrawn for this reason alone.

Furthermore, there is no evidence of record establishing that the Georgeau '924 pourable sealant would, or could, be used to bond the foam 14 of Venable '812 to the decking 12. For example, the foam 14 of Venable '812 appears to fit closely around the deck 12 (Fig. 3), and this suggests that the foam 14 may be foamed in place around the deck 12 without the use of a separate adhesive. If this is the case, it is very unclear how the pourable sealant of Georgeau '924 could be poured onto the deck 12 of Venable '812 prior to pouring or applying foam 14. Again, Applicant does not have the burden of proving that a hypothetical modification is impossible in order to establish patentability. Rather, the burden is on the Examiner to make appropriate findings of fact and establish a *prima face* of case of obviousness.

Claims 18-20 depend from claim 17, and are therefore believed to be allowable for those reasons set forth above in connection with independent claim 17.

Independent claim 21 recited among other features, "moisture-curing adhesive disposed between the steel deck and the substantially rigid panel in contact with the upper deck surfaces

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 16

and the lower surface of the substantially rigid panel". As discussed above in connection with independent claim 17, Venable '812 simply does not disclose moisture-curing adhesive, let alone moisture-curing adhesive adhering foam 14 of Venable '812 to the steel deck 12 of Venable '812. To the extent the Examiner is asserting that Venable '812 in some way inherently discloses "moisture-curing adhesive" as recited in claim 1, Applicant reiterates that "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" MPEP 2112(IV), citing *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(quoting *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991))(emphasis added).

Clearly, moisture-curing adhesive is not "necessarily present" in Venable '812 to adhere the foam 14 to the fluted steel deck 12 of Venable '812. Applicant asserts that the foam 14 of Venable '812 could be foamed in place onto deck 12 without use of an adhesive. Given that Venable '812 does not disclose any adhesive adhering foam 14 to steel deck 12, Applicant asserts that it would not be obvious to modify Venable '812 to include a pourable sealant as disclosed in Georgeau '924. The pourable sealant of Georgeau '924 is poured into a pitch pocket to form a seal around roof penetrations, and the cited references do not provide any reason to think that a pourable sealant could be utilized to adhere a rigid panel to a steel deck of a roof structure as recited in independent claim 21.

Claims 22-27 depend from claim 21, and are therefore believed to be allowable for those reasons set forth above in connection with independent claim 21.

Independent claim 16 recites, among other features, a "waterproof flexible membrane" covering a "roof substrate", and "a moisture curing substantially non-volatile adhesive disposed between the roof substrate and the flexible membrane to thereby bond the flexible membrane to

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 17

the roof substrate". Claim 16 also recites "a rigid low slope roof structure". (emphasis added). The Office Action dated April 28, 2009 states that "Venable however does teach a waterproof flexible membrane 18 covering said roof substrate 10; *a moisture curing substantially non-volatile adhesive 15* disposed between the roof substrate 10 and the flexible membrane 18" (emphasis added). Contrary to this assertion in the Office Action, Venable '812 actually teaches that "the preferred adhesive 15 is a polyurethane foam system designed for bonding the described membrane to acceptable substrates. "The diisocyanate and polyol components are mixed in gun 16 in an approximately 1:1 volumetric ratio." (column 4, lines 15-19) This is clearly not a "moisture curing substantially non-volatile adhesive" as recited in claim 16. Applicant appreciates that claims are broadly construed during prosecution. However, even during prosecution claim terms cannot be contorted without bound in an unreasonable manner: "The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach." MPEP 2111 (emphasis added). MPEP 2111.01(I) states that "words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification." Furthermore "'plain meaning' refers to the ordinary and customary meaning given to the term by those of ordinary skill in the art." MPEP 2111.01(II).

There is no evidence of record that one skilled in the art would consider the diisocyanate and polyol polyurethane foam of Venable '812 to be a moisture curing substantially non-volatile adhesive as recited in independent claim 16. The rejection of independent claim 16 is clearly incorrect, and should be withdrawn for this reason alone. Applicant respectfully asserts that improper claim construction cannot be used as a substitute for the findings of facts required for a proper rejection under 35 U.S.C. §103.

In summary, Applicant reiterates that "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." MPEP 2141.02, citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Venable '812 teaches use of

Applicant : Philip C. Georgeau, *et al.*
Appln. No. : 10/726,341
Page : : 18

a two part polyurethane foam, not a moisture curing adhesive, and Georgeau '924 clearly does not disclose use of a pourable sealant for bonding roof membranes to a roof substrate. The Office Action is clearly not consistent with the requirement that the prior art be considered in its entirety, and therefore constitutes improper picking and choosing.

Applicant has made a concerted effort to place the present application in condition for allowance, and a notice to this affect is earnestly solicited. In the event there are any remaining informalities, the courtesy of a telephone call to the undersigned attorney would be appreciated.

Respectfully submitted,
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